IN THE SPECIFICATION

Under the heading "Summary of the Invention," please amend the paragraph beginning at page 3, line 25 and ending at page 4, line 13 as follows:

In yet another aspect of the invention, a virtual flowbench simulation system is ~~sued~~ **used** to simulate fluid flow associated with a part described in a design file, where the part is a portion of a component. The system includes a graphical user interface operable to receive user-defined input specifying the design file, the type of part to be simulated, and other simulation parameters, and a generic template describing basic geometries and boundary conditions of the component. An autogridding process is operable to automatically generate surface and volume meshes in the component with the part described in the user-specified design file, and a computational fluid dynamic simulation process is operable to automatically simulate fluid flow in and around the component and measuring data. A controller is operable to monitor the computational fluid dynamic simulation process and issue simulation progress reports. The controller is further operable to terminate the simulation process when a steady state in measured data is reached or when a predetermined maximum time step is reached. A measurement data output process is operable to format and output the measured data in a user-specified representation.

Under the heading "Brief Description of the Drawings," please amend the paragraphs beginning at page 4, line 16 and ending at page 4, line 27 as follows:

For a better understanding of the present invention, reference may be made to the accompanying drawings, in which:

FIGURE 1 is a simplified block diagram of the virtual flowbench system and method constructed according to an embodiment of the present invention;

FIGURE 2 is a flowchart of the virtual flowbench system and method constructed according to an embodiment of the present invention; ~~and~~

FIGURE 3 is a more detailed flowchart of the graphical user interface process constructed according to an embodiment of the present invention**; and**

FIGURE 4 illustrates an example graphical user interface according to an embodiment of the present invention.

Under the heading "Detailed Description of the Invention," please amend the paragraph beginning at page 9, line 10 and ending at page 9, line 32 as follows:

FIGURE 3 is a more detailed flowchart of an exemplary graphical user interface process 16 constructed according to an embodiment of the present invention. **FIGURE 4 illustrates an example graphical user interface 16.** It should be noted that the exact order in which the data is entered by the user via the graphical user interface may vary from that shown ~~here~~ **in FIGURE 3**. Graphical user interface 16 may, at startup, display a number of clickable command buttons, including "New Case." When the user clicks on "New Case" to indicate that a new simulation case is desired, the user is prompted for additional information, such as the number of simulations, the number of intake valves and exhaust valves, and the pressure differential inside and outside of the port, as shown in blocks 70-74. In block 76, the user is prompted to indicate whether a port study or a valve study is desired. In a

port study, a number of valve lift heights are simulated with a given port. In a valve study, a given valve is simulated with different port pipes. If the user selects port study, the user is further prompted to specify, by name, the CAD engineering design input files of the solid model. The user is also given the option of browsing through his/her directories to select the files. In block 80, the user input for port study is complete.